

1 Introduction

The **AXIOM** AX54A-2D is a Capacitive Multi-touch controller with the very highest performance for use in demanding applications across markets such as Automotive, Industrial, White Goods and Medical.

The high performance acquisition engine enables the touchscreen controller to sense regular contacts and gloves. It also allows designers to use thick plastic front lenses and even to sense through a small air gap. Industry leading water rejection and wet finger tracking is also included.

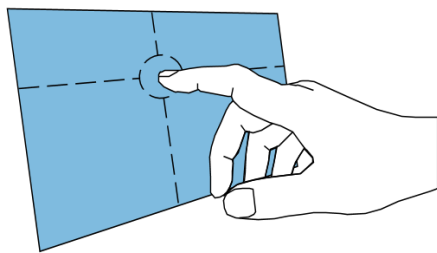


Figure 1-1: **AXIOM** 2D Touch Sensing

A Windows™ based software package, TouchHub, is provided with the AX54A-2D to ease design and tuning tasks. This allows the designer to input simplified design choices and enables TouchHub to automatically create optimized tuning configurations. Additionally, a digitizer driver is available for Linux.

Features at a glance

Capacitive Multi-touch controller

- Ultra high SNR: >80dB
- Supports up to 54 touch sensing channels
- Flexible channel routing allows arbitrary touch sensor aspect ratios
- Supports non-rectangular sensors
- Concurrently supports 2D (xy), 1D (slider) and 0D (button) sensors
- Touch sensing through very thick plastic lenses and/or air gaps
- Supports non-uniform lens thickness
- All touches reported at a frame rate of up to 250Hz¹
- Glove support without switching modes
- Water suppression and wet finger tracking
- Low emissions, low drive amplitude, high immunity to conducted interference
- Host connection using SPI or I2C slave with interrupt or LIN
- 3V3 and 1V8 supply, no high voltage generators needed
- Independent I/O voltage supporting 1.8V to 3.3V host signaling
- Optional external synchronization with display drivers for highest SNR

General

- Register based tuning with non-volatile configuration storage
- Field upgradable firmware
- Sophisticated Built-In-Self-Test routines and diagnostics
- Automotive AEC-Q100 grade 2 qualified²
- -40°C to +105°C ambient operating temperature
- Available in QFN88 package with side wettable flanks
- TouchHub evaluation and support software for design and tuning

¹Subject to configuration

²Pending

2 Ordering Information

Contact your local sales office for further details.

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Product Brief

3 Device Pinout

3.1 Pin Map

3.1.1 QFN88

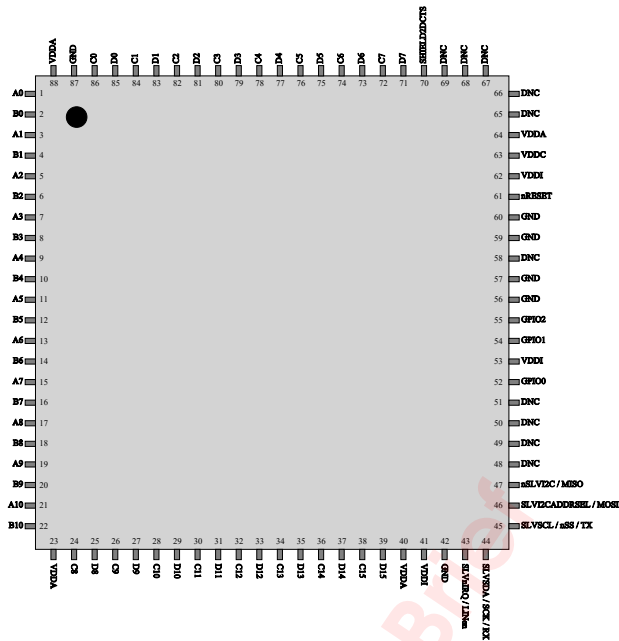


Figure 3.1.1-1: QFN88 Device Pinout (top view)

Appendix A Legal Copyright and Disclaimer

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Appendix B Document History

Revision	Date	Change summary
A1	12/06/2022	Preliminary release

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